
Submittal Requirements for Product Evaluations

The information and product requirements specified below will be used by the Department of Commerce and Consumer Affairs ("DCCA") to develop a wind resistive device ("WRD") evaluation report for roof to wall uplift restraint ties, residential safe room designs, roofing, and impact protective systems for windows, exterior doors, garage doors, and skylights, for use in the Loss Mitigation Grant Program. The WRD evaluation report shall identify the product, specify the maximum design pressure limitations, specify the wind speed limits where windborne debris resistant products may be used, specify the applicable component dimensions, describe the tested assembly, specify the applicable installation methods, and specify the fastener specifications used for the testing of the product to meet uniform static air pressure requirements and, as applicable, windborne debris requirements.

1.0 Minimum Information Required for Evaluation

- 1.1 Full name and address of manufacturer.
- 1.2 Manufacturer's engineering or technical representative contact, including telephone number, fax number, and/or e-mail address.
- 1.3 Manufacturer's contact phone number for local sales information.
- 1.4 Substantiating information as specified in Section 5.0 herein.
- 1.5 Please indicate if the submitted information is regarding a new product evaluation report or the revision of an existing evaluation report. If the information is for a revision, please indicate the existing evaluation date.
- 1.6 Electronic drawings that illustrate the construction and installation of the product(s) and are consistent with the submitted test data or evaluation information shall be submitted by the manufacturer. Drawings shall be included in the evaluation to provide guidance and to clarify the use of the product in the field. Contact the DCCA for acceptable formats for submitting electronic drawings.

2.0 Requirements for Products

- 2.1 Impact Protective Systems will be evaluated by the DCCA according to the wind cyclic pressure and windborne debris criteria of the Wind Resistive Device Technical Specifications available from the Insurance Division; and referenced test standards, procedures, and performance criteria.
 - a. Design Pressure Requirements - Exterior window, exterior door, garage door, skylight, impact protective system, roofing, roof vent, and exterior wall covering products shall be tested for cyclic air pressure resistance.
 - b. Windborne Debris Requirements - Wind Resistive Device products shall be designed to resist windborne debris. The device must be submitted as an impact protective system complete with all necessary attachments to specific types of residential construction.
 - c. Separate submittals of tests shall be furnished for each type of construction (wood stud construction, single wall board, masonry/concrete). For "single wall" construction, the WRD opening protection shall have been tested for impact installed onto a mock-up of a window or door opening in a representative 6 ft. wide by 8 ft. high single wall assemblage, secured at top and bottom to a 4 x 8 wood beam section.
- 2.2 At least 400 lbs. of allowable uplift load resistance is required to be demonstrated by testing to qualify a metal hurricane clip connection at roof rafter framing anchorage to an exterior wall with double top plates or to a beam support. If the connection involves multiple clips to a single rafter, test a multi-clip assembly that replicates the installation to be used.
 - a. In general, the allowable load of a connector is the lesser of the ultimate test load divided by a safety factor of 3, the test load at 1/8" deflection, and the calculated capacity of the fasteners and the strap of strap-type connectors. If the test load governs, no increase is permitted, but if the calculation limit governs, one may increase the load by 1.6 when the connector is used to resist wind or seismic loads per International Code Council AC criteria.

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- b. Separate submittals of tests shall be furnished for single wall construction using assemblies that include rafter, single top plate or beam, and the vertical redwood wallboard.

3.0 Product Applicability and Limitations of Evaluation Report

- 3.1 Evaluation of a product does not constitute approval of the product for use on all structures. The pressure rating or appropriate resistance rating of the product (reported in the DCCA evaluation) is indicated only for purposes of the Loss Mitigation Grant Program and is not meant to be a recommendation or warranty by DCCA for any other purpose.
- 3.2 The DCCA will develop the product evaluation report based on the manner in which the products were tested or analyzed for wind pressure or load resistance and windborne debris resistance. This includes the attachment of the product to the supporting members in test assembly and the material used for the supporting members. Products should be tested as they would be installed in the field. Products should be tested with a test frame or framing utilizing the framing materials replicating the installation details and be attached to the test frame or framing with the manufacturer's recommended fasteners.

4.0 Testing and Test Report Minimum Information Requirements

- 4.1 Testing Facility - Products shall be tested by an independent testing laboratory accepted by one of the following:
 - a. State of Hawaii Department of Commerce and Consumer Affairs or State of Hawaii Department of Defense
 - b. International Code Council Evaluation Service
- 4.2 Cyclic Pressure and Windborne Debris Testing - (**Window, Door, Garage Door, Skylight and Impact Protective Systems**) The DCCA will develop a product evaluation report for products tested to meet the following windborne debris standards:
 - a. ASTM E 1886-05 and ASTM E 1996-05.
- 4.3 Uniform Static Air Pressure - (**Roofing and roof vent products**)
 - a. The roof covering or roof vent system shall be tested in accordance with nationally recognized standards or procedures (ASTM, FM, and UL) or other methodologies accepted by the DCCA. Roof systems with built-up, modified bitumen, fully adhered or mechanically attached single ply and other membrane roof systems shall be tested in accordance with FM 4450, FM 4470, UL 580 or UL 1897. Metal panel systems through fastened or standing seam shall be tested in accordance with UL 580 or ASTM E 1592. Concrete and clay roof tiles shall be tested in accordance with Section 1715.2 of the International Building Code ("IBC") and their performance evaluated in accordance with Section 1609.7.3 of the IBC.
- 4.4 Test Information - Test reports or other information verified by the testing facility as part of the report, i.e. drawings or bill of materials, shall provide the following information at a minimum:
 - a. Description of the product to include model, series, or product name;
 - b. Overall dimensions of the tested assembly;
 - c. Description of tested assembly configuration where applicable;
 - d. Component dimensions (including fixed and operable sash and panel sizes) and glass dimensions in door panels;
 - e. Material specifications of the product assembly pertinent to the product and installation method's resistance to the loads that were applied during testing;
 - f. Glass construction and glazing method for all glazed products;
 - g. Hardware description and attachment (include fastener type, size, and quantity);
 - h. Assembly information of the product pertinent to the product and installation method's resistance to the loads that were applied during testing.
 - i. The lumber species and grade of the test framing. If the product is attached to sheathing, specify the type and thickness of the sheathing;
 - j. Description of fasteners used during testing to secure the product to the test frame. Include type, size, length, spacing, and embedment of the fasteners;
 - k. Design or test pressure used for air pressure testing; and
 - l. Windborne debris criteria for product testing, where applicable, to include description of the missile, missile velocity, impact location(s), and pressures used for the cyclic pressure loading.

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5.0 Substantiating Information

- 5.1 The following information shall be acceptable as substantiating information for development of a product evaluation for use with a specific type of construction:
- a. Code Evaluations - Current final International Code Council ("ICC") or Florida Building Code evaluation.
 - (1) A completed final model code, Florida Building Code evaluation report with all referenced drawings or information attached.
 - (2) Complete test information or other evidence submitted to the code bodies should be provided.
 - b. Testing Information - Test reports containing the minimum information outlined under Section 4.0 of this document. Where engineering analysis has been performed in conjunction with the test report for performance or installation of the product, the completed signed and sealed analysis shall be submitted for inclusion of the information into the evaluation report.
 - c. Engineering Analysis - A signed and sealed engineering analysis may be submitted as substantiating information to analyze specific structural components or to specify acceptable installation methods. All calculations shall be signed and sealed by a Hawaii licensed structural engineer.
 - d. Engineered Drawings - A signed and sealed engineered drawing may be submitted as part of the substantiating information to analyze specific structural components or to specify acceptable installation methods. Three (3) copies of the drawings shall be submitted for review.
 - e. Labels (Exterior windows, sliding glass doors, skylights) – For each window or sliding glass door product to be listed in the evaluation report, submit a copy of the label which complies with either Section R613.3 of the International Residential Code ("IRC") or Section 1714.5.1 of the IBC. For each skylight to be listed in the evaluation report, submit a copy of the label which complies with either R308.6.9 of the IRC or Section 2405.5.2 of the IBC.
- 5.2 All evaluations, test reports and engineering analysis must be in their final form. Draft reports, evaluation or analysis can not be used as substantiating information.
- 5.3 Where ultimate test loads are reported, an applicable factor of safety for the product type shall be applied by the DCCA to determine an acceptable design load for the evaluation report.

Table 1
Pressure and Impact Testing Requirements Based on Product Type

Testing Requirements	Exterior Opening Products ¹	Roof ³ Covering Products	Impact Protective Systems
Shall be tested to meet uniform static wind pressure requirements (Section 4.3)	Yes	Yes	Yes
Shall be tested to meet windborne debris and cyclic wind pressure requirements (Section 4.2)	No ²	No	Yes

¹ Exterior opening products include windows, doors, garage doors, and skylights.

² If not rated for windborne debris, opening must be protected from windborne debris with an independent impact protective system.